

ER 8-5178

AUG 4 1956

The Honorable Arthur S. Flemming
The Director, Office of Defense Mobilization
Executive Office Building
Washington, D. C.

Dear Arthur:

Further to our letter of 25 May 1956 in which a review of the Soviet position in titanium production was made, I am now able to report to you the following additional information.

First, my research people are satisfied that the present state of the art of titanium metallurgy in the USSR is at about the same level that American technology found itself two to three years ago. The Soviets are just beginning to use the consumable electrode and double-melting techniques. They have only within the last few months turned to copper crucibles from the graphite crucibles. American technicians made this transition several years ago when they found that the titanium picked up carbon from the graphite crucibles.

According to a press article in *Promyshlennno-ekonomicheskaya Gazeta* (Industrial-Economic Gazette) dated 1 July 1956, titanium electrodes up to 80 millimeters in diameter are in use in the USSR. Our industry uses electrodes about twice this size. We are rolling ingots of titanium of one-two tons. We believe that the Soviets have only recently been able to roll one-half to one ton ingots.

Since our first letter on this subject, we have convened a second Government-wide conference on Soviet titanium developments. The conclusions of this conference were as follows:

a. The Soviet titanium industry as of June 1956 may have reached small-scale commercial production.

b. Information available to date is too fragmentary to base a quantitative estimate of titanium production in the USSR.

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e. Evidence of Soviet utilization of titanium metal and alloys in aircraft or for other applications is lacking except for experimental work. Of course, ferro-titanium is used in steel manufacture.

We have found a reference to titanium technology in the East German literature which will be of interest to you. In the Zeitschrift Chemie-Ingenieur-Technik, No. 4, 1956, reference is made to experiments "on a technical scale" for production of titanium sponge by a modified Kroll process (reduction takes place in vacuo instead of in a noble gas atmosphere) at the Bitterfeld plant of V.E.B. Electrochemisches Kombinat. This plant is well-chosen for the experiments in the light of its extensive experience in the production of magnesium.

Our next communication on titanium will be in your hands at the end of the year in accord with your request. Of course, if we obtain any information of immediate importance before that time, I shall convey it to you.

Faithfully,

SIGNED

Allen W. Dulles
Director

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